

## ABSTRACT

The addition of the Iodide ion by way of Potassium Iodide to a peroxide such as Hydrogen Peroxide in a basic medium yields Free Radical Oxygen and water; generating large amounts of heat and depleting the Hydrogen Peroxide in a matter of minutes. The Free Radical Oxygen generated in this reaction can be utilized to oxidize organic molecules that produce offending stains on select items, including teeth. Once the Free Radical Oxygen has oxidized the offending molecule the color is lost and the solubility changes allowing the colorless oxidized fragments of the offending molecule to be washed away in the solvent. The Iodide ion catalyzes the reaction allowing for precise control over the speed at which the stain is removed without the need for other expensive, cumbersome energy adding equipment such as lights, lasers, heat sources, etc.